

24 and 27-29 have been amended. Support for the amendments can be found on page 5, lines 3-25 and Fig. 1. No new matter has been introduced.

RESPONSE TO REJECTION UNDER 35 U.S.C. § 102

Claims 1-4, 6-18, 20- 24 and 27-29 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Wynne* et al (US 5,328,743). The Examiner states:

Wynne et al. teach a reinforced shrink wrap that is multilayered with reinforcing grids in adhesive layers on either side of a shrink film with outer layers of olefin film (abstract). The shrink film layer is highly irradiated polyethylene and the preferred thickness is from 0.75 mil to 1.5 mils (col. 2, ln. 22-25). The outer layers of the shrink wrap is a polyolefin film from 1 to 6 mil thick and may have two plies or more (col. 2, ln. 48-49 and 54). The polyolefin layers can include additives such as color additives, antioxidants, ultraviolet light stabilizers, and corrosion inhibitors (col. 3, ln. 15-22). In addition, additives used in polyolefin film may be included as desired in the polyolefin inner or outer layers or in one of more plies of a multiply film. Additives include ultraviolet light stabilizers and flame retardants (col. 1, ln. 52-58).

The reinforcing grid is preferably 200 to 800 denier yarn in a crisscross pattern which the Examiner equates to be the non-woven scrim of Applicant's invention. The grid is filamentous made of single strand or multiple filament yarn preferably nylon, polyester or blends (col. 2, ln. 28-31). The reinforcing grid is in a layer of adhesive, which the Examiner equates to be the tie layer of Applicant's invention, that has a dry thickness of between 0.25 and 1 mil. The adhesive should be used in an effective amount to prevent delamination (col. 2, ln. 31-36). Inherently, the adhesive of Wynne et al. will have a lower modulus than the outer polyolefin layers since the adhesive is not used in an amount that retards the movement of the grid and because the grid sags to prevent tearing.

Office Action of November 6, 2002, pages 2-3.

The Applicants have considered the Examiner's reasons in view of the disclosure of Wynne and respectfully disagree. The Applicants reasons are stated as follows.

Anticipation requires that a single reference teach, expressly or inherently, every claim limitation. The Applicants have amended the claims to state that the reinforced shrink wrap is an *extrusion-laminated* shrink wrap. The disclosure of Wynne fails to teach such an extrusion-laminated shrink wrap. For example, Wynne teaches that the various layers with an adhesive and filamentous grid the following manufacturing method can be employed. The layers are coated on one side with the adhesive. The reinforcing filamentous grid is laid on one layer of adhesive coated film so that the grid covers substantially the entire area. The grid can be formed by laying filaments in a crisscross pattern to either side of the machine axis. Then the two layers

are bonded together on the adhesive coated sides with the grid in between and *rolled under pressure*. The process is repeated to provide additional reinforcing layers as desired. *See column 3, lines 3-15* (emphasis added). The reinforcing grid of *Wynne*, is in a layer of water-based or solvent-based adhesive or other *pressure sensitive adhesive*. *See col. 2, lines 31-33*. The adhesive of *Wynne* could not be extruded to form a tie layer because it would decompose due to the temperatures used to manufacture the claimed extrusion laminated reinforced shrink wrap. The temperatures of the process would start to shrink the film during the lamination process. Thus, *Wynne* fails to teach the extrusion-laminated shrink film as recited in claims 1, 14, 15 and 27. Therefore, *Wynne* does not anticipate the invention encompassed by claims 1-4, 6-18, 20-24 and 27-29.

For these reasons, *Wynne* does not anticipate any of the pending claims. The Applicants further submit that *Wynne* does not render the pending claims obvious either. Consequently, all pending claims are patentable.

CONCLUSION

Applicants have addressed all of the Examiner's rejections. In conjunction with the claim amendments and arguments above, Applicants believe that the claims are now in condition for allowance and respectfully request that the Examiner grant such an action. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below.

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No fees are due as a result of this Reply. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 10-0447, reference 41836.55USC1(BAI).

Respectfully submitted,
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APPENDIX A - MARKED UP CLAIMS

1. (Amended) ~~A~~ An extrusion-laminated reinforced shrink wrap comprising:
 - a first layer of thermoplastic;
 - a second layer of thermoplastic;
 - at least one layer of said first and second layers comprising a shrink film of highly irradiated polyolefin;
 - a reinforcing grid disposed between the first and second layers of thermoplastic; and
 - a tie layer of elastomeric material disposed between the first layer and the second layer holding the reinforcing grid but allowing slippage of the reinforcing grid in the tie layer upon tensile loading,wherein the first layer, the second layer, the reinforcing grid and the tie layer are extrusion laminated together to form the reinforced shrink wrap, and wherein the elastomeric tie layer has a lower modulus than at least one of the thermoplastic layers.
2. (Amended) The extrusion-laminated ~~A~~ reinforced shrink wrap of claim 1 wherein the shrink film of highly irradiated polyolefin is polyethylene.
3. (Amended) The extrusion-laminated ~~A~~ reinforced shrink wrap of claim 1 wherein the reinforcing grid is a non-woven scrim.
4. (Amended) The extrusion-laminated ~~A~~ reinforced shrink wrap of claim 3 wherein the reinforcing grid material is selected from the group consisting of nylon filament and polyester filament from about 200 to about 800 denier.
6. (Amended) The extrusion-laminated ~~A~~ reinforced shrink wrap of claim 1 wherein at least one of said thermoplastic layers includes multiple plies of thermoplastic.
7. (Amended) The extrusion-laminated ~~A~~ reinforced shrink wrap of claim 1 wherein the tie layer is from about 0.75 to about 1.5 mils in thickness.

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8. (Amended) The extrusion-laminated A reinforced shrink wrap of claim 1 wherein the first and second layers of thermoplastic are from about 0.75 to about 6 mils thick.

9. (Amended) The extrusion-laminated A reinforced shrink wrap of claim 1 wherein at least one of the thermoplastic layers includes an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.

10. (Amended) The extrusion-laminated A reinforced shrink wrap of claim 1 wherein the tie layer includes an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.

11. (Amended) The extrusion-laminated A reinforced shrink wrap of claim 6 wherein at least one ply of thermoplastic contains an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.

12. (Amended) The extrusion-laminated A reinforced shrink wrap of claim 2 wherein the polyethylene is selected from the group consisting of linear low density polyethylene, low density polyethylene and mixtures thereof.

13. (Amended) A product cover made of the extrusion-laminated reinforced shrink wrap of claim 1.

14. (Amended) An A extrusion-laminated reinforced shrink wrap comprising:

a layer of shrink film of highly irradiated polyethylene selected from the group consisting of linear low density polyethylene, low density polyethylene and mixtures thereof between about 0.75 and about 1.5 mils in thickness;

a layer of thermoplastic;

an elastomeric tie layer extrusion laminated between the layer of thermoplastic and the layer of shrink film;

a yarn selected from the group consisting of nylon and polyester in a crisscross grid pattern disposed in the elastomeric tie layer, the tie layer of holding yarn but allowing slippage of the yarn in the tie layer upon tensile loading and wherein the elastomeric tie layer has a lower modulus than the thermoplastic layer.

15. (Amended) A multi-layered extrusion-laminated reinforced shrink wrap comprising:
at least three layers of thermoplastic;

at least one of the thermoplastic layers is a shrink film of highly irradiated polyolefin; and

at least two tie layers of elastomeric material alternatively disposed between the thermoplastic layers, each holding a reinforcing grid but allowing slippage of the reinforcing grid in the tie layer upon tensile loading,

wherein the layers of thermoplastic, the tie layers with the grid are extrusion laminated together to form the multi-layered reinforced shrink wrap, and

wherein the elastomeric tie layers have a lower modulus than at least one of the thermoplastic layers.

16. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the shrink film of highly irradiated polyolefin is polyethylene.

17. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the reinforcing grid is a non-woven scrim.

18. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the reinforcing grid is selected from the group consisting of nylon filament and polyester filament from about 200 to about 800 denier ~~denier~~.

20. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein at least one of said thermoplastic layers includes multiple thermoplastic plies.

21. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein each of the tie layers is from about 0.75 to about 1.5 mils in thickness.

22. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the thermoplastic layers are from about 0.75 to about 6 mils thick.

23. (Amended) ~~A~~ The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein at least one of the thermoplastic layers contains an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.

24. (Amended) A product cover made of the multi-layered extrusion-laminated reinforced shrink wrap of claim 15.

27. (Amended) ~~A~~ An extrusion-laminated reinforced shrink wrap obtained by the method comprising:

providing two thermoplastic sheets, at least one of the sheets being a shrink film;

placing a reinforcing grid between the two thermoplastic sheets;

extruding an elastomeric material at an elevated temperature to form a tie layer between the two sheets, the tie layer being in contact with the reinforcing grid and the two thermoplastic sheets;

extrusion laminating the two sheets and the reinforcing grid with the tie layer to form a reinforced shrink wrap; and

controlling the thickness of the tie layer so that the shrink film does not begin to shrink substantially during laminating,

wherein the reinforcing grid is held by the elastomeric tie layer between the two thermoplastic sheets after laminating, and

wherein the elastomeric layer has a lower modulus than at least one of the thermoplastic layers.

28. (Amended) The extrusion-laminated reinforced shrink wrap of claim 27 wherein the shrink film is highly irradiated polyethylene.

29. (Amended)The extrusion-laminated reinforced shrink wrap of claim 27 wherein the reinforcing grid is a non-woven scrim.

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APPENDIX B - CLEAN SET OF PENDING CLAIMS

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1. An extrusion-laminated reinforced shrink wrap comprising:
 - a first layer of thermoplastic;
 - a second layer of thermoplastic;
 - at least one layer of said first and second layers comprising a shrink film of highly irradiated polyolefin;
 - a reinforcing grid disposed between the first and second layers of thermoplastic; and
 - a tie layer of elastomeric material disposed between the first layer and the second layer holding the reinforcing grid but allowing slippage of the reinforcing grid in the tie layer upon tensile loading,wherein the first layer, the second layer, the reinforcing grid and the tie layer are extrusion laminated together to form the reinforced shrink wrap, and wherein the elastomeric tie layer has a lower modulus than at least one of the thermoplastic layers.
2. The extrusion-laminated reinforced shrink wrap of claim 1 wherein the shrink film of highly irradiated polyolefin is polyethylene.
3. The extrusion-laminated reinforced shrink wrap of claim 1 wherein the reinforcing grid is a non-woven scrim.
4. The extrusion-laminated reinforced shrink wrap of claim 3 wherein the reinforcing grid material is selected from the group consisting of nylon filament and polyester filament from about 200 to about 800 denier.
6. The extrusion-laminated reinforced shrink wrap of claim 1 wherein at least one of said thermoplastic layers includes multiple plies of thermoplastic.
7. The extrusion-laminated reinforced shrink wrap of claim 1 wherein the tie layer is from about 0.75 to about 1.5 mils in thickness.

8. The extrusion-laminated reinforced shrink wrap of claim 1 wherein the first and second layers of thermoplastic are from about 0.75 to about 6 mils thick.
9. The extrusion-laminated reinforced shrink wrap of claim 1 wherein at least one of the thermoplastic layers includes an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.
10. The extrusion-laminated reinforced shrink wrap of claim 1 wherein the tie layer includes an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.
11. The extrusion-laminated reinforced shrink wrap of claim 6 wherein at least one ply of thermoplastic contains an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.
12. The extrusion-laminated reinforced shrink wrap of claim 2 wherein the polyethylene is selected from the group consisting of linear low density polyethylene, low density polyethylene and mixtures thereof.
13. A product cover made of the extrusion-laminated reinforced shrink wrap of claim 1.
14. An extrusion-laminated reinforced shrink wrap comprising:
 - a layer of shrink film of highly irradiated polyethylene selected from the group consisting of linear low density polyethylene, low density polyethylene and mixtures thereof between about 0.75 and about 1.5 mils in thickness;
 - a layer of thermoplastic;
 - an elastomeric tie layer extrusion laminated between the layer of thermoplastic and the layer of shrink film;

a yarn selected from the group consisting of nylon and polyester in a crisscross grid pattern disposed in the elastomeric tie layer, the tie layer of holding yarn but allowing slippage of the yarn in the tie layer upon tensile loading and wherein the elastomeric tie layer has a lower modulus than the thermoplastic layer.

15. A multi-layered extrusion-laminated reinforced shrink wrap comprising:
at least three layers of thermoplastic;

at least one of the thermoplastic layers is a shrink film of highly irradiated polyolefin; and

at least two tie layers of elastomeric material alternatively disposed between the thermoplastic layers, each holding a reinforcing grid but allowing slippage of the reinforcing grid in the tie layer upon tensile loading,

wherein the layers of thermoplastic, the tie layers with the grid are extrusion laminated together to form the multi-layered reinforced shrink wrap, and

wherein the elastomeric tie layers have a lower modulus than at least one of the thermoplastic layers.

16. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the shrink film of highly irradiated polyolefin is polyethylene.

17. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the reinforcing grid is a non-woven scrim.

18. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the reinforcing grid is selected from the group consisting of nylon filament and polyester filament from about 200 to about 800 denier.

20. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein at least one of said thermoplastic layers includes multiple thermoplastic plies.

21. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein each of the tie layers is from about 0.75 to about 1.5 mils in thickness.
22. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein the thermoplastic layers are from about 0.75 to about 6 mils thick.
23. The multi-layered extrusion-laminated reinforced shrink wrap of claim 15 wherein at least one of the thermoplastic layers contains an additive selected from the group consisting of ultraviolet stabilizer, flame retardant, static inhibitor, color additive, antioxidant, corrosion inhibitor, biocide and mixtures thereof.
24. A product cover made of the multi-layered extrusion-laminated reinforced shrink wrap of claim 15.
27. An extrusion-laminated reinforced shrink wrap obtained by the method comprising:
 providing two thermoplastic sheets, at least one of the sheets being a shrink film;
 placing a reinforcing grid between the two thermoplastic sheets;
 extruding an elastomeric material at an elevated temperature to form a tie layer between the two sheets, the tie layer being in contact with the reinforcing grid and the two thermoplastic sheets;
 extrusion laminating the two sheets and the reinforcing grid with the tie layer to form a reinforced shrink wrap; and
 controlling the thickness of the tie layer so that the shrink film does not begin to shrink substantially during laminating,
 wherein the reinforcing grid is held by the elastomeric tie layer between the two thermoplastic sheets after laminating, and
 wherein the elastomeric layer has a lower modulus than at least one of the thermoplastic layers.

28. The extrusion-laminated reinforced shrink wrap of claim 27 wherein the shrink film is highly irradiated polyethylene.

29. The extrusion-laminated reinforced shrink wrap of claim 27 wherein the reinforcing grid is a non-woven scrim.

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